

REMARKS

Claims 1-8 are pending. Claim 1 is currently amended.

In the Office action, the claims were rejected as follows:

- (1) Claims 1-2 were rejected as anticipated by Sato et al. (U.S. Patent No. 6,974,263).
- (2) Claims 1, 4-7 were rejected as anticipated by Bartur et al. (U.S. Patent App. No. 2003/0147601).
- (3) Claim 8 was rejected as unpatentable over Bartur et al. in view of Sato et al.
- (4) Claim 3 was rejected as unpatentable over Bartur et al.

In view of the foregoing amendment and the following remarks, applicant respectfully requests reconsideration of the pending claims.

Currently amended claim 1 recites an optical communications module that includes a plurality of dielectric wiring substrates and a chassis in which the dielectric wiring substrates form the outer walls of the chassis. Claim 1 further recites that at least two of the dielectric wiring substrates have metal parts formed on one side. For example, FIG. 1(a) of the present application shows an exploded view of an optical communications module in which dielectric wiring substrates 2a-2d form the outer walls of chassis 4. Metal plates 4a-4d are formed on the rear side of the dielectric wiring substrates 2a-2d, respectively (page 6, line 12 – page 7, line 8). One particular advantage of the structure recited in claim 1 is that the arrangement of the metal plates on the rear surface of the wiring substrates enables efficient conduction of heat away from the optical communications module. Additionally, using the dielectric substrates as both the outer walls of the chassis and as the wiring boards may reduce the number of components required to fabricate the device, which allows a reduction in cost.

In contrast, neither the Sato et al. patent nor the Bartur et al. reference discloses or suggests the features recited in pending claim 1.

The Sato et al. patent discloses an optical data link 20 that includes a mounting member 22, an optical element assembly 24, a circuit board 26 and an electrically conductive cover member 28 (*see* FIGS. 1, 2; col. 5, lines 46-57). The Sato et al. patent also discloses a system that includes an optical data link having a printed circuit board 4 and a housing base member 2 made of metal (*see* FIGS. 15-16; col. 1, lines 24-33). However, neither of these devices includes multiple dielectric wiring substrates that form the “outer walls of the chassis” or multiple wiring substrates having “metal parts formed on one side” as recited in claim 1 of the present application. In each device, only a *single* printed circuit board (26 and 4) is disclosed. Furthermore, neither of the circuit boards 26, 4 form “the outer walls” of a chassis. Instead, they are housed within either the conductive cover member 28 or the housing base member 4.

The Bartur reference discloses an optical module 10 comprising a housing 11 which contains one or more active optical components. The active optical components are mounted within the housing 11 and have electrical leads 12 coupled to external circuitry by flexible circuit boards 14, 16 and 18 (*see* FIGS. 1A and 1B, par. [0021]). There is no disclosure or suggestion in the Bartur reference that multiple dielectric wiring substrates form the “outer wall of the chassis.” The housing 11, which the Office action alleges corresponds to the claimed “chassis,” contains the active optical elements but does not have outer walls that are formed of dielectric wiring boards. Instead, the optical elements are coupled to external circuitry on the flexible circuit boards 14, 16 and 18 (par. [0021]). The flexible circuit boards 14, 16 and 18, however, do not form the “outer wall of a chassis.” Rather, the flexible circuit boards 14, 16 and 18 are connected after the active optical components are mounted within the housing 11.

Independent claim 1 should be allowed for at least the foregoing reasons.

Claims 2-8 depend from claim 1 and should be allowed for at least the same reasons as claim 1.

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It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.


Conclusion

In view of the above remarks, all remaining claims are allowable and a notice of allowance should be issued.

No fee is believed due. However, please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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